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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,779	12/20/2005	Gregory E. Hinshaw	450-024	5878

7590 06/21/2007

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EXAMINER	
COLLINS, GIOVANNA M	
ART UNIT	PAPER NUMBER
3672	

MAIL DATE	DELIVERY MODE
06/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/561,779	HINSHAW ET AL.	
	Examiner	Art Unit	
	Giovanna M. Collins	3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6,7,9-14 and 17-23* is/are rejected.

7)☒ Claim(s) *2-5,8,15 and 16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/21/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1,,7,10-14,18 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Mercer et al. 6035951

Referring to claim 1, Mercer discloses an instrumented drill head for use with a drilling machine having a drilling element for penetrating the earth and a receiver for receiving information related to the drilling operation comprising a case (20) including a rotatable chuck, a first sensor carried by the case a transmitter for wirelessly transmitting the output signal to the receiver separate for the case (col. 16, lines 37-45).

Referring to claim 7, Mercer discloses the sensor is internal to the case and separate from the drilling element (col. 16, lines 37-45).

Referring to 9, Mercer discloses the transmitter mounts on the drill head and a controlling including the receiver mount to a structure on the drilling machine separate

for ht drill head (col. 16, lines 37-45).

Referring to claims 10, Mercer discloses a position sensor for generating a position signal (col. 12, lines 33-51).

Referring to claim 12, Mercer discloses the controller regulate the rotational speed or feed rate of the drilling element.

Referring to claims 11 and 13, Mercer discloses a drill head (20) a first sensor positioned in the interior of the case for sensing and generating an output signal, a control separate from the case including a receiver and a transmitter for wireless transmitting the output signal to the receiver (col. 16, lines 37-45).

Referring to claim 14, Mercer discloses a mast (18) for supporting the drill head.

Referring to claims 18 and 19, Mercer discloses the method of associating a first sensor with the drill head for sensing and generating an output signal, providing a receiver separate from the drill head for receiving the output signal (col. 16, lines 37-45).

3. Claims 1,6,7,9-14 and 17-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Bischel et al. 20020157870.

Referring to claim 1, Bischel discloses an instrumented drill head for use with a drilling machine having a drilling element for penetrating the earth and a receiver for receiving information related to the drilling operation comprising a case (124) including a rotatable chuck, a first sensor carried by the case a transmitter for wirelessly

transmitting the output signal to the receiver separate for the case (paragraph 0064).

Referring to claim 6, Bischel discloses the first parameter is a rotational speed of the drilling element and the first sensor is an inductive proximity sensor for sensing the passing teeth on a drive gear (paragraph 0064).

Referring to claims 7,, Bischel discloses the sensor is internal to the case and separate from the drilling element (Paragraph 0064).

Referring to 9, Bischel discloses the transmitter mounts on the drill head and a controlling including the receiver mount to a structure on the drilling machine separate for ht drill head (paragraph 0064).

Referring to claims 10, Bischel discloses a position sensor for generating a position signal (paragraph 0040).

Referring to claims 11 and 13, Bischel discloses a drill head (124) a first sensor positioned in the interior of the case for sensing and generating an output signal, a control separate from the case including a receiver and a transmitter for wireless transmitting the output signal to the receiver (paragraph 0064).

Referring to claims 12 and 20, Bischel discloses the controller regulate the rotational speed or feed rate of the drilling element (paragraph 0040).
Referring to claim 14, Bischel discloses a mast (122) for supporting the drill head.
Referring to claim 17, Bischel discloses a case (124) including a rotatable chuck, a motor 10) for rotating the drilling element a first sensor that is an inductive proximity sensor for sensing the passing teeth on a drive gear (paragraph 0064).

Referring to claims 18 and 19, Bischel discloses the method of associating a

first sensor with the drill head for sensing and generating an output signal, providing a receiver separate from the drill head for receiving the output signal (paragraph 0034).

4. Claims 18-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Houwelingen et al.. US 20010022238 .

Referring to claims 18 and 19, Houwelingen discloses the method of associating a first sensor with the drill head for sensing and generating an output signal, providing a receiver separate from the drill head for receiving the output signal (paragraph 0105).

Referring to claim 20, Houwelingen discloses controlling the feed rate speed of the drilling element based on the output signal (paragraph 0009).

Referring to claim 21, Houwelingen discloses forming a plurality of bores and mapping the earth's conditions (paragraph 0009).

Referring to claim 22, Houwelingen discloses the output signal represents unfavorable drilling or operating conditions (paragraph 0008).

Referring to claim 23, Houwelingen discloses regulating the drilling operation based on the output signal to maximize the penetration and minimize wear on the drilling element (paragraph 0008).

Allowable Subject Matter

5. Claims 2-5, 8,and 15-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Giovanna M. Collins whose telephone number is 571-272-7027. The examiner can normally be reached on 6:30-3 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

gmc

Giovanna M. Collins
Patent Examiner
Technology Center 3670